REMARKS

The comments of the applicant below are each preceded by related comments of the examiner (in small, bold type).

> **3. Claims 1-7, 9, 11-16, 18-32, 34, 36,40,41, and 44 are rejected under 35 U.S.C. 102(e) as being anticipated by Song et al. (US 6,920,951).**
>
> **Song et al. disclosed, as shown in fig. 1-3, a vehicle suspension system comprising: electronic controller 36, actuator 10 comprising a clamp circuit including switch circuitry 30, 39 powered by energy from movement of the actuator to generate a passive damping characteristic of the actuator, see col. 5, lines 66-67 and col. 6, lines 1-31.**

Claim 1 has been amended. Song does not describe, and would not have made obvious, switch circuitry that is powered by movement of an actuator to passively damp the actuator "during a failure."

Song is concerned with converting otherwise-wasted energy into stored electrical energy that can supplement the vehicle's power supply. The rectifier 20 and DC-DC converter 26 are coupled to both the battery 32 and the resisting element 34 so that the resisting element can dissipate the energy (to perform the damping function of the suspension) and the battery can store any excess energy (col. 5, lines 48-65). The connection between the rectifier 20 and the battery 32 or resisting element 34 is controlled by electronics including a microprocessor-controlled variable electrical switch (VES) 30 (col. 4, lines 48-57). (Note that in figure 4a and 4b, which show a switch 54 shorting the rectifier, this is part of the battery charging and power distribution system, not the passive damping circuitry. The specification notes that "the rectifying circuit 40 encompasses the rectifier 20, the DC-DC converter 24, and VES 30 described above. The connection of the VES 30 to the resisting element is not shown in these figures" (col. 6, lines 33-37).)

In contrast, the claimed system provides fail-safe passive damping using the electromagnetic actuator (which, under normal operation, provides active force) during times, such as failure of the vehicle's power supply and during vehicle startup and shutdown, where power is not available (description, p. 8, line 22 *et seq.*). The claimed system does this, in some examples, by connecting a power output from the rectifier (by way of a step-up circuit) to the gate input of an IGBT transistor connected across the terminals of the rectifier (p. 9, line 19 – p.

10, line 20). As a result, the power from the actuator triggers and powers the switch, which then damps the actuator, without other control electronics or power supply required. Such a clamping circuit will operate independently of whether the vehicle's power supply is operational (in some examples, the switch is actively disabled when the power supply system is operating properly, see p. 12, line 14 – p. 13, line 5).

Song does not address how the microprocessor 36 or VES 30 are powered at all, let alone whether they operate or how they would be powered in a failure situation or at other times that the vehicle power supply is unavailable, such as startup. Although the energy from the actuator does pass through a rectifier and is used to replenish the vehicle's power supply, and, therefore, indirectly powers the active control electronics during normal operation, Song gives no indication that this power would still be available to power the microprocessor 36 or VES 30 in the event that the rest of the power supply system were to fail, or that any of the electronics are configured to be powered directly by the energy from the rectifier, that is, before it is delivered to the storage battery. Song does not describe and would not have made obvious switch circuitry that is powered during a failure by energy from the same actuator it is damping.

> **6. Claims 10, 17, 35, 37-39, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. in view of Miller (US 5,296,785).**
>
> **Re-claims 10, 17, 35, and 37-39 Song et al. failed to disclose wherein the clamp circuit is enabled when a failure is detected.**
>
> **Miller teaches the use of suspension damping unit wherein the clamp circuit is enabled when a failure is detected.**
>
> **It would have been obvious to one of ordinary skill in the art to provide the known clamp circuit that is enabled when a failure is detected into the system of Song et al., as taught by Miller, in order to provide a fail-safe damping rate for the suspension system**

Aspects of claim 10 have been incorporated into claim 1, but the examiner's rejection of claim 10 is not accurate in view of the elements of claim 1. As the applicant noted in response to the office action of October 13, 2006, Miller does not describe and would not have made obvious "switch circuitry powered by energy from movement of the actuator." While Miller does describe a fail-safe control circuit, it is powered by a dedicated power supply 160, not by energy from movement of the actuator (col. 6, lines 54-56.) The switch 162 activated by the fault control circuit 164 receives current "from the battery 140 and/or from a capacitor 168" (col. 6, lines 66-

68). Also note figure 4, where multiple elements (e.g., 174, 180) of the fail-safe circuit are externally powered (+V) (see col. 7, lines 13-22).

Miller may suggest that Song would benefit from a fail-safe clamping circuit, but it does not describe and would not have made obvious doing so with "switch circuitry powered by energy from movement of the actuator."

Claims 12, 19, and 26 have been amended and are patentable for at least the same reasons as claim 1.

All of the dependent claims are patentable for at least the reasons for which the claims on which they depend are patentable.

Canceled claims, if any, have been canceled without prejudice or disclaimer.

Any circumstance in which the applicant has (a) addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner, (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims, or (c) amended or canceled a claim does not mean that the applicant concedes any of the examiner's positions with respect to that claim or other claims.

Please apply any other charges or credits to deposit account 06-1050, order 02103-381001.

Respectfully submitted,

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